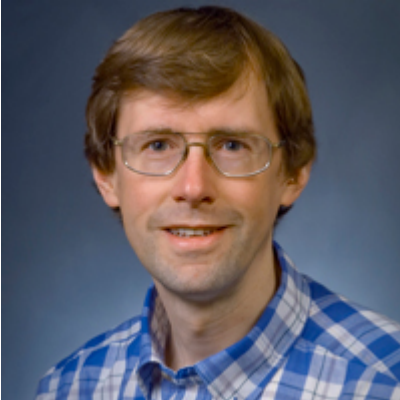




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Randy Vander Wal's work in NASA Tech Briefs



Friday, July 30, 2010

Randy Vander Wal, associate professor, Energy and Mineral Engineering, recently had his work highlighted in the July edition of NASA Tech Briefs. The article, Processing Nanostructured Sensors Using Microfabrication Techniques, details the outcome of a three-year project, in which researchers developed a new approach to the fabrication of microsensors with nanostructures.

These microsensors have many potential applications, including emissions monitoring, leak detection, engine monitoring, security, fire detection, personal health monitoring, and environmental monitoring.

The current fabrication process involves adding nanostructures to a solution and then applying the solution to the sensor material, which results in random nanostructure placement that is not reproducible. The microfabrication technique, outlined in the brief, results in aligned nanostructures that bridge the electrodes and buried (i.e. protected) electrical contacts. In addition, this process allows for large-scale processing, a huge advantage in the manufacturing of nanostructured sensors.

This work was completed in conjunction with Gary W. Hunter, Laura J. Evans, and Jennifer C. Xu of the John H. Glenn Research Center in Cleveland, OH. Prior to coming to Penn State, VanderWal managed a large and active research group at the Glenn Research Center.

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